

REMARKS

Applicants respectfully request reconsideration of this application as amended. No claims have been amended. Claims 16-20 have been cancelled, without prejudice. Therefore, claims 8, 9 and 21-27 are presented for examination.

Objection to Drawings

With regard to Figure 4A, Applicant submits a new and corrected Figure 4A to replace the originally submitted Figure 4A. The new Figure 4A is submitted herewith.

35 U.S.C. § 103 Rejection

Claims 8-9, 14-17, and 21-24 stand rejected under 35 U.S.C. §103 (a) as being anticipated by Stiles et al., U.S. Patent No. 5,515,518 ("Stiles") in view of Karp et al., U.S. Patent No. 6,321,328 ("Karp").

Stiles discloses a hybrid cache structure . . . [having a] first level BPC . . . which *cached full prediction information* for a limited number of branch instructions . . . [and the] second direct mapped level BPC . . . which *cached only partial prediction information*, but does so for a much larger number of branch instructions" (Abstract; emphasis provided). Karp discloses "*a low-latency data cache for holding data accessed in the memory in response to the instructions, a low latency data buffer for holding speculative data accessed in the memory in response to the speculative load instruction*" (col. 2, lines 3-7; emphasis provided; see generally, col. 2, lines 1-55). Stiles and Karp, neither individually nor when combined, teach or reasonably suggest the combination and use of SBTB and ABTB as recited by claim 8.

In contrast, for example, claim 8, in pertinent part, recites:

A method, comprising:

speculatively allocating a first branch entry for a conditional branch in a speculative branch target buffer (SBTB) prior to execution of the conditional branch responsive to decoding the conditional branch

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and finding no branch entry in an architectural branch target buffer (ABTB) corresponding to the conditional branch;
speculatively allocating a second branch entry for the conditional branch in the SBTB responsive to a subsequent failed attempt to locate a branch entry in the ABTB corresponding to the conditional branch;
allocating a third branch entry for the conditional branch in the ABTB after retirement of the conditional branch; and
subsequently performing branch prediction for the conditional branch by determining a predicted target address branch based upon branch data associated with the second branch entry.
(emphasis provided).

Claim 8 recites a combination of SBTB and ABTB to speculatively allocate a first branch in response to decoding of a conditional branch and with no branch entry in the ABTB, speculatively allocation a second branch if still failed to locate a branch entry in the ABTB, and allocating a third branch entry in the ABTB once the conditional branch as retired. Stiles and Karp, neither individually nor when combined, teach or reasonably suggest, having and using the SBTB and the ABTB as recited by claim 8. Accordingly, Applicants request the withdrawal of the rejection to claim 8 and its dependent claims.

With regard to claims 14 and 21, they contain limitations similar to those of claim 8. Accordingly, Applicants respectfully request the withdrawal of rejection to claims 14 and 21 and their dependent claims.

35 U.S.C. § 103 Rejection

Claims 18-20 and 25-27 stand rejected under 35 U.S.C. §103 (a) as being anticipated by Stiles in view of Karp as applied to claims 1, 10, and 16 above, and further in view of Applicant's admitted prior art in the Background of the Invention ("Prior Art").

With regard to claims 18-20, they have been cancelled, without prejudice.

With regard to claim 25-27, they depend from claim 21 and thus, include the limitations of the claim 21. Accordingly, Applicants request the withdrawal of rejection to claims 25-27.

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Conclusion

Applicants submit that claims as amended are now in condition for allowance. Accordingly, Applicants respectfully request that the rejections be withdrawn and the application be allowed.

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Invitation for a Telephone Interview

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Request for an Extension of Time

Applicants respectfully petition for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension.


Charge our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

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